

REFERENCE 9

MEMORANDUM

DATE: June 1, 2015

TO: Division File

FROM: Lance Range, Environmental Protection Specialist, Illinois EPA *22R*

SUBJECT: Documentation of the Area of Waste pile (Source 1) and Redistributed Slag (Source 2) present at the Old American Zinc site

SITE NUMBER: 1630505007
Fairmont City, Illinois
Old American Zinc Plant
Superfund/HRS

Source Area Calculations and Notes

A desktop Geographic Information System (GIS) utilizing the ARCGIS 10.2 program was used to aid in calculations for the area of the waste pile present at the Old American Zinc site in Fairmont City, Illinois. The notes and calculations for determining the area of the original waste pile source are provided, as follows. The waste characterization samples were collected from the stockpiled slag in the northern section of the Facility Area including the east pile (w-001), the center pile (w-002), and the west pile (w-003). Each waste sample consisted of a 4-point composite. Four discrete aliquots of equal volume were collected with a stainless-steel trowel, placed into a clean, re-sealable, plastic bag and mixed to achieve a homogenous blend and transported to the mobile sampling trailer. After X-ray Fluorescence analysis, the sample was transferred to a clean, 8-ounce laboratory supplied container, labeled and packed into an iced cooler. Samples were submitted to the approved laboratory for metal analysis of the eight total and Resource Conservation and Recovery Act (RCRA) Toxic Characteristic Leaching Procedure (TCLP) metals and zinc (Ref. 3, p. 2-4). The area currently covered by the stockpiled slag is located in the northern portion of the Facility Area and is estimated to cover approximately 4.3 acres (Ref. 3, pp. 27-28). Based on the topographic survey, the current existing volume of the three slag stockpiles along the northern boundary of the Facility Area is approximately 39,000 to 40,000 cubic yards (Ref. 3, pp. 28, 43-44). Area is identified in Ref. 3, p. 146, Fig. 2. For this HRS evaluation the value of 39,000 cubic yards will be utilized.

In the ARCVIEW Program 10.2, the staff of the Illinois Environmental Protection Agency (IEPA) rectified a JPEG image of Figure 19 from the 2009 Remedial Investigation report using the locations provided in this Figure (ENTACT, 2009). Sample locations from Ref. 3, Figure 19 are depicted on Figure 7 (attached) of the documentation record. The image was then rectified based on a georeferenced 2012 aerial photograph (ERSI, 2014; World Imagery) and saved as an IMAGINE image. The source area outline was then traced using ARCVIEW editor tools to create an ARCVIEW graphic, which was then converted to a feature using ARCGIS 10.2. The area of this

feature was then measured using GIS measurement tools contained within the ARCGIS 10.2 program. For the purposes of the Hazard Ranking Score Documentation Record, the area of the pile is unknown, but greater than zero.

Even with the extensive sampling that was conducted for this investigation, there remains areas that are unknown if slag exists across the entire area of the Facility, especially under building foundations and paved areas. For the purpose of this documentation record, it is feasible to assign an area of greater than zero, but unknown.

Figure 3
Old American Zinc Plant Slag Piles - Source 1

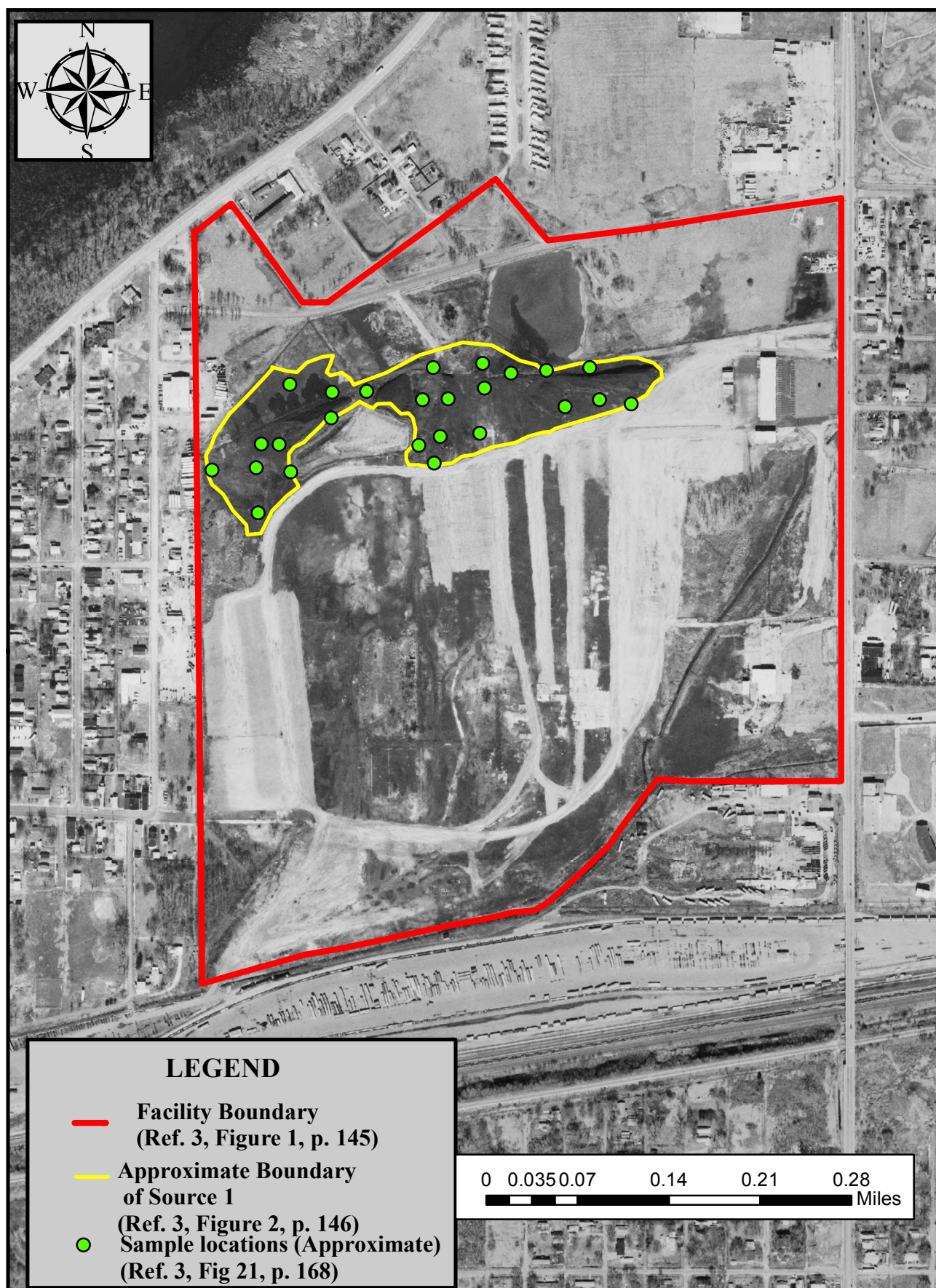
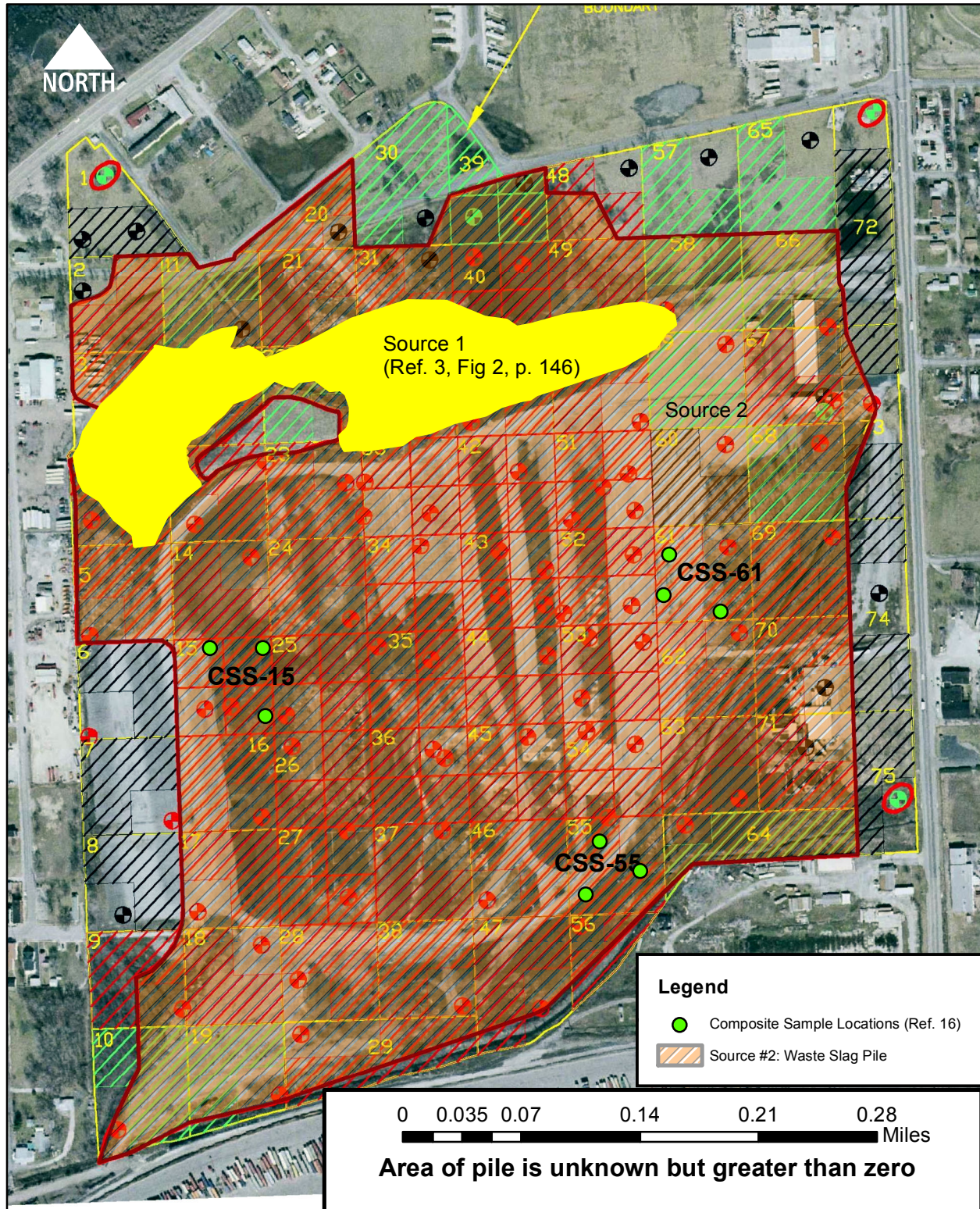


Figure 7
Area of Source #2
Old American Zinc Plant



Illinois State Geological Survey. Prairie Research Institute. University of Illinois at Urbana-Champaign.
 Illinois Geospatial Data Clearing House. Access 2005 DOQQ files for Illinois by County
 Universal Transverse Mercator (UTM) Zones 15 and 16, St. Clair, Monks Mound Quadrangle, SW section
<http://www.isgs.uiuc.edu/nsdihome/webdocs/doq05/county/stclair.html>. Accessed on June 15, 2015.

Ref. 9 explains how area was calculated. Ref. 3, Fig. 19, p. 166 was used for sample locations. Basemap was provided by Surdex, Chesterfield, MO (2005 Ortho-Rectified Aerial Photograph). Composite Sample Locations (Ref. 16)

References

ENTACT, 2009. Final Remedial Investigation Report for the Old American Zinc Plant Site. Fairmont City, Illinois. Revision 2, March 13, 2009. Prepared by ENTACT: 1010 Executive Court, Westmont, Illinois. [4694 pages]

ESRI, 2014. ArcGIS Map Service: World Imagery, Online Map Images. Electronic data maintained by ESRI including imagery from DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community. High Resolution Imagery provided by DigitalGlobe. At <http://www.arcgis.com/home/item.html?id=10df2279f9684e4a9f6a7f08febac2a9>. Accessed on March 19, 2014.